UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,532	11/09/2001	Jedrick J. Weldon	09710-1111	5779

7590 12/17/2001

WORLDCOM, Inc.
Technology Law Department
1133 19TH ST, NW
WASHINGTON, DC 20036

EXAMINER
TRINH, DUNG N

ART UNIT	PAPER NUMBER
2663	

DATE MAILED: 12/17/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/986,532	Applicant(s) Weldon et al.
	Examiner D. Trinh	Art Unit 2663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Nov 9, 2001* .

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-23* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☐ Notice of References Cited (PTO-892)

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

19) ☐ Notice of Informal Patent Application (PTO-152)

20) ☐ Other:

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Objections

2. Claims 20-21 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 20-21 do not incorporate the communication system recited in the corresponding parent claim 14.

Claim Rejections - 35 USC § 112

3. Claim 12 and 19-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 12, line 5, there is unclear antecedent basis for "the virtual private communication network".

In claim 19, line 3, there is unclear antecedent basis for "the virtual private network".

In claims 20 and 21, line 1, there is insufficient antecedent basis for "the virtual private network operation center".

Claim Rejections - 35 USC § 103

4. Claims 9-20, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mirek et al (US 5,878,032) in view of Diebboll et al (US 5,886,643).

Regarding claims 9, 22, and 23, Mirek discloses a system in which node A sends node B a measurement cell (probe message) and transfer delay Td (propagation time) is determined, see col. 4, lines 52-53 and equation 1.

Mirek differs from the claimed invention in that Mirek does not explicitly disclose that node A is a router (claims 22, 23), that the network is private (claim 22), and that node A has an enclosure (claim 22). However, Diebboll teaches that a probe such as node A could be part of a router, see col. 4, lines 45-48. Combining hardware could simplify design and reduce cost. Therefore, it would have been obvious to one of ordinary skill in the art to include node A as part of a router, as taught by Diebboll, to simplify design. It would have been obvious to declare a network private by making it unavailable to the public and to use an enclosure, both to increase security and protection.

Mirek differs from claim 9 in that Mirek does not explicitly disclose software to send the measurement cell. However, it would have been obvious for one of ordinary skill in the art to

implement a process as software running on, for example, a workstation, to increase flexibility in future upgrade(s).

Regarding claim 14, Diebboll discloses that a probe could be part of a router (ie. probing router), see col. 4, lines 45-48. Diebboll also discloses a Network Management System NMS that obtains information on traffic, performance, and problems. The NMS includes a report generator, see col. 5, lines 1-11. Diebboll differs from the claimed invention in that Diebboll does not mention a processor to receive probe information. However, such processor is inherent in the NMS workstation because a workstation cannot operate without a processor.

Regarding claim 10, Mirek discloses a value T1 to indicate when a measurement cell (probe message) is sent from node A, see col. 4, lines 7-8.

Regarding claim 11, Mirek discloses a value T3 to indicate when a reporting measurement cell (reply probe message) is sent from node B (destination probing router), see col. 4, lines 11-12. Node B also sends delay difference information Tb (remote latency indicator), see col. 4, lines 57-60.

Regarding claim 12, Mirek discloses that statistics such as round trip delay, cell transfer delay can be calculated, see col. 5, equations 3-6.

Regarding claims 13 and 15, as stated earlier, it would have been obvious to declare a network private by, for example, making it unavailable to the public.

Regarding claim 16, Mirek/Diebboll differ from the claimed invention in that they do not explicitly say that the router is at a customer premise. However, it would have been obvious to

one of ordinary skill in the art to locate the router in any location that meets requirement, including, for example, customer premise.

Regarding claim 17, Diebboll discloses that the NMS report generator 50 can generate and display performance and utilization reports, see col. 5, lines 11-15.

Regarding claim 18, Mirek/Diebboll differ from the claimed invention in that they do not explicitly disclose reporting statistics on an Internet web site. However, it would have been obvious to one of ordinary skill in the art to communicate information through an Internet web site because such site can provide quick updates, ready access, and centralization of information.

Regarding claims 19 and 20, Diebboll discloses that the NMS can identify all servers talking to a node (topology information) and periodically poll the probes for data, see col. 5, lines 25-30.

5. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mirek et al (US 5,878,032) in view of Diebboll et al (US 5,886,643) and prior art acknowledged by Applicant on page 2 of the specification.

Regarding claim 21, Mirek/Diebboll determine all traffic, including losses, between two nodes, see Diebboll, col. 5, lines 25-29 and 63-66. Mirek/Diebboll differ from the claimed invention in that they do not explicitly disclose determining availability or loss rate. However, as Applicant correctly points out on page 2, lines 10-12, of the specification, availability is a typical metric. Availability is a parameter that has been widely used to determine basically whether a

resource is reliable enough to meet requirement. Therefore, to one of ordinary skill in the art, it would have been obvious to determine the availability in the system of Mirek/Diebboll to see if such network can meet required reliability.

6. Claims 1, 2, 4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al (US 5,930,257) in view of Mirek et al (US 5,878,032).

Regarding claim 1, Smith discloses a router, see Fig. 4, with routing engine 430 and comms port. Smith differs from the claimed invention in that Smith does not explicitly mention a bus. However, such a bus is inherent because router components cannot communicate with one another without it. Smith also differs from the claimed invention in that Smith does not explicitly disclose a probing mechanism, as part of the router, that sends a probe at T1. However, Mirek discloses a system in which node A sends node B a measurement cell (probe message) at T1, see col. 4, lines 7-8 and 52-53. Combining hardware could simplify design and reduce cost. Therefore, it would have been obvious to one of ordinary skill in the art to include the probing mechanism taught by Mirek in the Smith router to simplify design. Mirek also differs from the claimed invention in that Mirek does not explicitly say that the measurement cell is sent over an in-band channel. However, since Mirek is trying to determine the delay between two nodes, it would have been obvious to one of ordinary skill in the art that Mirek is determining the delay in the actual data path between the nodes.

Regarding claim 2, Mirek discloses a value T3 to indicate when a reporting measurement cell (reply probe message) is sent from node B (destination probing router), see col. 4, lines 11-12. Node B also sends delay difference information Tb (remote latency indicator), see col. 4, lines 57-60. Mirek discloses that statistics such as round trip delay, cell transfer delay can be calculated, see col. 5, equations 3-6.

Regarding claim 4, Smith/Mirek differ from the claimed invention in that they do not explicitly mention a private network. However, it would have been obvious to declare a network private by, for example, making it unavailable to the public.

Regarding claim 5, Mirek discloses a Delay Result field to indicate the time between when Node B receives the measurement cell and when Node B responds, see col. 5, lines 65-67.

7. Claims 3, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al (US 5,930,257) in view of Mirek et al (US 5,878,032) and Diebboll et al (US 5,886,643).

Regarding claim 3, Smith/Mirek differ from the claimed invention in that they do not disclose that the probe mechanism can store service level stats. However, Diebboll discloses that probes can collect data and maintain statistical information for later analysis, see col. 4, lines 22-34. By having a probe maintaining its collected information, the load on central computing will be reduced. Therefore, to one of ordinary skill in the art, it would have been obvious to have the probes maintaining stats to lessen the central computing load in the Smith/Mirek system.

Regarding claim 6, Smith/Mirek differ from the claimed invention in that they do not disclose a remotely programmable poling interval. However, Diebboll discloses a system that periodically polls the probes for data, see col. 5, lines 29-30. Using remotely programmable settings increases flexibility and reduce cost. Therefore, to one of ordinary skill in the art, it would have been obvious to remotely set the polling interval, as taught by Diebboll, to increase flexibility in the Smith/Mirek system.

Regarding claim 7, Mirek discloses that statistics such as round trip delay, cell transfer delay can be calculated, see col. 5, equations 3-6.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al (US 5,930,257) in view of Mirek et al (US 5,878,032) and Diebboll et al (US 5,886,643) and prior art acknowledged by Applicant on page 2 of the specification.

Regarding claim 8, Smith/Mirek/Diebboll determine all traffic, including losses, between two nodes, see Diebboll, col. 5, lines 25-29 and 63-66. Smith/Mirek/Diebboll differ from the claimed invention in that they do not explicitly disclose determining availability or loss rate. However, as Applicant correctly points out on page 2, lines 10-12, of the specification, availability is a typical metric. Availability has been widely used to determine basically whether a resource is reliable enough to meet requirement. Therefore, to one of ordinary skill in the art, it would have been obvious to determine the availability in the system of Smith/Mirek/Diebboll to see if such network can meet required reliability.

Response to Arguments

9. Applicant's arguments filed November 9, 2001 for the rejections under 35 USC 103 have been fully considered but they are not persuasive.

Applicant's main argument, similar to those from the parent case, has been focused on the term "in-band", see p. 2, last paragraph and p. 3 of Remarks. Applicant also stated, "... the final Office Action in the parent case, on page 5, item 4, acknowledges that the combination of *Smith et al* and *Mirek et al* fails to disclose sending a probe message over an in-band communication channel", see p. 2 last paragraph of Remarks. In response, the examiner made no such acknowledgment. The examiner stated, "Mirek also differs from claim 1 in that Mirek does not explicitly say that the measurement cell is sent over an in-band channel." only to show that Mirek does not explicitly use the term "in-band". Mirek does, however, send cells over an "in-band" channel as explained below.

First, for the records, Applicant defines "in-band" path as "the actual path that a particular packet follows", see specification, p. 3, last paragraph, lines 4-5.

Mirek sends a measurement cell from node A to node B to measure the path delay between the two nodes. Since Mirek's invention is directed to measuring delay of data between nodes A and B, it would have been obvious to one skilled in the art that Mirek is sending the measurement cell along the actual data path between the nodes because any other path would be a path not used by the actual data, and, therefore, would not result in the delay of data between the nodes. This "actual data path between the nodes" is the same as "actual path that a particular

packet follows", defined by Applicant as "in-band". Therefore, while Mirek does not explicitly use the word "in-band" to refer to the path between node A and node B, however, according to Applicant's definition of "in-band", Mirek is sending the measurement cell over an in-band channel. Applicant then argued that "...since the delay could be measured ... based on other paths or channels", see p. 3, 2nd paragraph of Remarks. In response, examiner refers Applicant to Fig. 1 of Mirek, which shows that the measured path between Node A and Node B is specifically identified (ie. "Selected VPC/VCC"). This eliminates any "other paths", as suggested by Applicant.

Conclusion

10. Any inquiry concerning this communication from the examiner should be directed to D. Trinh whose telephone number is (703) 306-5620. The examiner can normally be reached on Monday through Friday from 8:00 am to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Chau Nguyen, can be reached on (703) 308-5340. The fax number for the organization where this application or proceeding is assigned is (703) 308-6296.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

DT

D. Trinh, December 13, 2001

Chau T. Nguyen

CHAU NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600